VHL Mutation Mimics the Hypoxic State

VHL = von Hippel-Lindau gene; HIF = hypoxia-inducible factor.

Transcription of:
VEGF
Other angiogenic factors

Targeted therapy for kidney cancer

Progression model of ccRCC development in VHL patients
Renal Cell Regulation

Kidney tubule - Simple cyst - Renal cell carcinoma

Cilia loss >48 genes (VHL, HIF1α and HIF2α, PTEN, RB (PBRM1, SETD2), BAP1, KDM5). ER stress, Replicative stress

Talk: Fraydoon Rastinejad

Eijiro Nakamura: inducible pluripotent stem cells

Zebrafish with VHL:
Othon Iliopoulous and Rachel Giles

Vascular defects, like hemangioblastomas
Retinal angiomas
Pancreas
Kidney
Adrenal Glands

Drug testing/target discovery
**VHL- A Regulatory Hub**

![VHL Diagram](Image)

Li and Kim J Cell Mol Med 2011

Eric Jonasch

**VHL-specific metabolism: Amato Giaccia**

![Metabolism Diagram](Image)

- HIF suppresses PGC-1α expression via activation of Dec1
- PGC-1α suppression results in decreased OXPHOS activity and promotes clear cell phenotype
- Induction of PGC-1α inhibits ccRCC tumor growth and suppresses clear cell phenotype
- Decreased expression of PGC-1α is significantly associated with poor clinical outcome in ccRCC

**Puzzle pieces of fundamental biology**

- JADE-1 (Herb Cohen)- DNA damage repair
- pVHL binds AKT1 (WenYi Wei)
- pVHL link to LC3C which acts like a new tumor suppressor in mice (Maria Czyzyk-Krzeska)
- ZHX2: new pVHL target in kidney cancer (Qing Zhang)
- We have hemangioblastoma cell lines! (Ana Matelo)
Immunotherapy, Kidney Cancer
Talks: Gordon Freeman, Marcela Maus

CART-cell therapy
Checkpoint inhibitors
Discussion about safety for VHL carriers

More Information: 10-for-IO.info